



Fact Sheet:

March 1997

(LL 13)

VIDEO IMAGING (VI) LABORATORY

The Problem

The Army has recognized that troops without adequate realistic training will be unprepared for combat, resulting in high casualties and the inability to complete missions (U.S. Army Training Circular [TC] 25-1, August 1978). In providing effective training, however, the Army must also minimize environmental damage caused by its training activities. Communication between training area land managers, trainers, engineers, and the public is necessary to manage training lands effectively for environmental quality and maximum training realism.

The Technology

As part of the Integrated Training Area Management (ITAM) program being developed by the U.S. Army Construction Engineering Research Laboratories (CERL), a Video Imaging (VI) Laboratory has been established to provide in-house capabilities for video simulation work. This lab allows CERL researchers to apply, adapt, and explore VI technology for realistic training land design. The CERL VI Lab has several simulation workstations and other specialized equipment consisting of:

- 80486 microprocessor-based microcomputers using a #9 GXiTC Level 29 or TARGA+ /64 graphics adapters for advanced graphics display capabilities
- 90MB removable cartridge systems
- CD ROM drives for high-resolution Kodak PhotoCD support

- 17" high-resolution RGB multisync monitors
- Color flatbed scanner for inputting prints, aerials, and satellite images
- Color Postscript printer for hard copy output
- Hewlett-Packard color pen plotter
- Two Global Positioning System (GPS) receivers
- Nikon 35mm SLR camera and zoom (28mm-85mm) lens
- Panasonic camcorder -Software: image editing, presentation, CAD, terrain modeling, solid (3-D) modeling, rendering.

In addition to theoretical research, the VI Lab serves as an interface to installations with video simulation technology, performs tests, provides demonstrations, and creates simulations for proposed design actions. U.S. Army Corps of Engineers offices wishing to take advantage of the VI Lab's capabilities should identify their particular need through a letter or telephone call to the points of contact listed below. Experts at the VI Lab can provide up to two man-days of assistance to Corps users without charge. Should a site visit be required, the requester pays travel and temporary-duty expenses. Federal agencies outside the Corps may use the VI Lab, but they must pay for any work other than advice or information provided over the phone.

Benefits/Savings

Comments from land managers and other audiences for whom simulations have been created indicate that the simulations were both realistic and visually accurate. In addition, land managers felt that the simulations were useful in communicating the impacts to others. The positive response of audiences to the simulations suggests that video simulation can be a useful tool for Army training land managers and trainers. The VI Laboratory is a readily accessible information resource that can help land managers and installation environmental personnel make sound decisions about land management.

Status

In addition to theoretical and exploratory research, the VI Lab has assisted in the design of ITAM environmental awareness posters; integrated video imagery with

the Geographic Resources Analysis Support System to increase data legibility for analysis and presentation to users; and has started to link GPS technology with digital terrain models (using AutoCad) and video imaging to produce highly accurate and realistic visual simulations.

The VI Lab has also created demonstration images for Hohenfels Combat Maneuver Training Center in Germany and has developed simulations of alternative proposals for vehicle barriers at Fort Riley, KS. Simulations have also been developed to depict various land management strategies and training land designs at Fort Huachuca, AZ; Fort McCoy, WI; Fort Benning, GA; and Fort Knox, KY. In addition, conceptual simulations of proposed actions in the Camp Shelby, MS environmental impact statement were provided to decision-makers for use in public hearings and Congressional briefings; and conducted training workshops for installation personnel.

Point of Contact

CERL POC is Thomas A. Hale, COMM 217-398-5447; toll-free 800-USA-CERL; FAX 217-398-5470; e-mail t-hale@cecer.army.mil; or CERL, ATTN: CECER-LL-R, P.O. Box 9005, Champaign, IL 61826-9005.

Visit the CERL homepage at <http://www.cecer.army.mil>
